

**UNITED NATIONS
DEVELOPMENT
PROGRAMME**Distributed on request
DP/PROJECTS/7226 H

ENGLISH

**APPROVAL OF UNDP ASSISTANCE TO A GLOBAL PROJECT
(GLO/91/G31) - Emission of Global Warming Gases from Rice Fields, Methane**

Date of approval by the AC: 1/	15 January 1992
Expected duration:	Five years
Proposed executing agency:	UNDP/OPS
Proposed UNDP contribution:	\$5 000 000
Source of funds:	Global IPF

Project background

There has been considerable conjecture regarding the sources of methane accumulating in the atmosphere at the rate of one percent per year. Based on available data, flooded rice is suspected of being a major contributor. Because of the international character of the International Rice Research Institute (IRRI), its recognized scientific capacity, its well established contacts with major rice producing countries, IRRI was identified as a logical candidate to obtain critical quantitative data on CH₄ production. Projected global population levels indicate that the demand for rice will increase by 65 percent over the next 30 years, from 460 million tons today to 760 million tons in the year 2020. Additional rice is most likely to be produced in existing cultivated flooded rice areas through the intensification of production. Thus, global methane emission from flooded rice agriculture is like to increase.

Recent atmospheric measurements indicate that concentrations of greenhouse gases such as carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) are increasing. Methane emission from flooded rice may be the source for approximately 26 percent of the global atmospheric methane. Other sources of methane include ruminants, natural gas, deforestation and landfills.

The development of higher yielding new plant types, intensification of irrigated rice area, substitution of organic substrates for inorganic fertilizer, may all enhance methane emission from flooded rice fields. Thus, there is a need for research on interactions of rice cultural practices and technologies and methane emission to determine modifications and strategies that will reduce emission while maintaining high and sustainable rice yields. Increased rice production and food security, sustaining soil and water resources, increasing income, and reducing rural unemployment are issues of high priority to rice consuming developing countries. Thus, agricultural research systems of rice growing countries in the developing world have not placed high priority on the question of methane emission from flooded rice fields. To address this issue, UNDP assistance was requested under the present approval.

^{1/} This Fact Sheet reflects the status of the project/revision at the time it was approved by the Action Committee; modifications to the project/revision may have occurred subsequently.

Description of project

Project activities will include: (a) measuring methane fluxes at key sites of major flooded rice ecosystems (irrigated rice, rainfed rice, deepwater and tidal rice) in collaboration with China, India, Indonesia, Philippines and Thailand; (b) providing better knowledge on processes that control methane fluxes from flooded rice in order to develop effective mitigation technologies and provide options for local consideration; (c) investigation of current rice technologies and practices that promote or mitigate methane emission in major rice ecosystems; (d) evaluation of soil processes that control methane fluxes (production and disappearances) in rice fields; (e) enabling rice-growing developing countries to benefit from external support and technical collaboration in addressing issues surrounding methane emission from flooded rice soils; (f) training scientists of collaborating countries in measurement techniques of methane fluxes in rice fields and in analyses of the soil-floodwater-plant complex; (g) providing complete methane flux measurement system and accompanying kit for soil and water analyses to each research site; and (h) reviewing experiments and sharing experiences among participating scientists at annual planning workshops and visits to research sites.

As a result of the project, national programmes in five major rice growing countries in the developing world will have their own reliable data on methane fluxes from rice fields. National programmes will have explored the effects of current major cultivation practices on methane emission and may have tested some mitigation technologies. Reliable methane-emission rates for major rice ecosystems will also allow better global and regional estimates of annual fluxes of methane from rice fields. Finally, this effort will contribute to an increased awareness by decision makers, administrators and the public on causes, extent and mitigation options of methane emission from rice fields.

Inputs

UNDP funds will be used for five collaborating countries for equipment, research costs and salaries, training, conferences and consultancies.

Financial data

	\$
Personnel	2 061 400
Training	470 600
Equipment	1 468 000
Miscellaneous	<u>1 000 000</u>
Total	<u>5 000 000</u>

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